

This is a repository copy of *Infectious agents : missed opportunities for prevention*.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/181873/>

Version: Published Version

Book Section:

Newton, Robert orcid.org/0000-0001-6715-9153 and de Martel, Catherine (2020) *Infectious agents : missed opportunities for prevention*. In: Stewart, B. V., Weiderpass, E. and Wild, C. P., (eds.) *World Cancer Report*. World Cancer Report . International Agency for Research on Cancer , Lyons , pp. 61-67.

Reuse

This article is distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND) licence. This licence only allows you to download this work and share it with others as long as you credit the authors, but you can't change the article in any way or use it commercially. More information and the full terms of the licence here: <https://creativecommons.org/licenses/>

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.

Contents

Foreword	ix	3 Biological processes in cancer development	147
Preface	x		
Introduction	xii	3.1 Sporadic cancer	148
		<i>Tumorigenesis in the absence of an established or avoidable cause</i>	
1 The global cancer burden	15	3.2 Genomics	154
1.1 The burden and prevention of premature deaths from noncommunicable diseases, including cancer: a global perspective	16	<i>Susceptibility and somatic patterns</i>	
1.2 Global trends in cancer incidence and mortality	23	3.3 Gene–environment interactions	164
1.3 Transitions in human development and the global cancer burden	34	<i>The preventive implications are still not clear</i>	
Known causes of human cancer by organ site	45	3.4 DNA repair and genetic instability	170
		<i>Endogenous and exogenous sources of damage and hereditary syndromes</i>	
2 Causes of cancer, including hazardous circumstances	49	3.5 Inflammation	181
2.1 Tobacco products	50	<i>Playing a pivotal role in cancer pathogenesis</i>	
<i>Massive and still growing causes of cancer worldwide</i>		3.6 Reproductive and hormonal factors	189
2.2 Infectious agents	61	<i>Important contributors to several cancer sites</i>	
<i>Missed opportunities for prevention</i>		3.7 Metabolic change and metabolomics	200
2.3 Alcohol consumption	68	<i>Emerging approaches and new insights</i>	
<i>A leading risk factor for cancer</i>		3.8 Epigenetics	206
2.4 Sunlight and ultraviolet radiation	77	<i>Potential in diagnostics, therapy, and prevention</i>	
<i>Affecting skin cancer incidence in many countries</i>		3.9 Immune function	215
2.5 Ionizing radiation and radiofrequency electromagnetic fields	84	<i>From the tumour microenvironment to therapeutic targeting</i>	
<i>Further clarification of particular risks</i>		3.10 The microbiome	221
2.6 Diet and nutrition	92	<i>Its influence on tumorigenesis and therapy</i>	
<i>Understanding which factors are critical</i>		3.11 Identifying carcinogens from 10 key characteristics	229
2.7 Physical activity, sedentary behaviour, and obesity	101	<i>A new approach based on mechanisms</i>	
<i>Established and emerging modifiable risk factors</i>		The IARC Handbooks of Cancer Prevention	236
2.8 Dietary carcinogens	109		
<i>A continuing concern in various contexts</i>		4 Inequalities that affect cancer prevention	237
2.9 Contamination of air, water, soil, and food	115	4.1 Inequalities between and within countries	238
<i>The challenge is to characterize specific risks</i>		<i>Impact on cancer prevention</i>	
2.10 Occupation	127	4.2 Socioeconomic factors and cancer prevention in Africa	246
<i>The need for continuing vigilance</i>		<i>Cervical cancer as an example</i>	
2.11 Pharmaceutical drugs	137	4.3 Cancer in urban and rural communities in China	252
<i>A current focus on hormones</i>		<i>Patterns reflect social dynamics</i>	
World Cancer Research Fund International/ American Institute for Cancer Research	144	4.4 Socioeconomic factors and cancer prevention in India	258
		<i>Diverse interventions are needed</i>	

4.5	Variations in implementation of cancer screening in European countries <i>Striving for best practice</i>	266	5.16	Kidney cancer <i>Multiple risk factors, but currently limited preventive strategies</i>	447
4.6	Disparities in cancer prevention services in the USA <i>A long-standing, persistent cause of inequity</i>	276	5.17	Brain cancer <i>Increasing attention on the immune response</i>	454
4.7	Cancer in Indigenous populations <i>Focusing on inequalities that are sometimes invisible</i>	288	5.18	Thyroid cancer <i>The challenge of overdiagnosis</i>	461
Towards the World Code Against Cancer		295	5.19	Non-Hodgkin lymphoma <i>Complex etiology, including the role of immune function</i>	468
5	Preventing particular tumour types	297	5.20	Leukaemias <i>Understanding pathogenesis through similarities and differences</i>	477
A guide to the epidemiology data in Section 5: Preventing particular tumour types		298	WHO Report on Cancer: Setting priorities, investing wisely and providing care for all		485
5.1	Lung cancer <i>Continues to be the leading cause of cancer death</i>	299	6	The basis for, and outcomes from, prevention strategies	487
5.2	Head and neck cancers <i>New etiological insights</i>	310	Tobacco cessation: the WHO perspective		488
5.3	Oesophageal cancer <i>A tale of two malignancies</i>	323	6.1	Changing behaviour <i>The need for sustainable implementation</i>	499
5.4	Stomach cancer <i>Still one of the main cancer types worldwide</i>	333	6.2	Improving diet and nutrition, physical activity, and body weight <i>From evidence to practice</i>	506
5.5	Colorectal cancer <i>Decreasing disparities and promoting prevention are policy priorities</i>	344	6.3	Vaccination <i>The prospect of eliminating some cancer types</i>	513
5.6	Liver cancer <i>An infectious disease for many communities</i>	355	6.4	Preventive therapy <i>Certain interventions clearly established</i>	522
5.7	Pancreatic cancer <i>Many risk factors too poorly characterized to enable prevention</i>	367	6.5	Managing people with high and moderate genetic risk <i>Genomic tools to promote effective cancer risk reduction</i>	530
5.8	Skin cancer <i>A focus on primary prevention</i>	374	6.6	Screening <i>From biology to public health</i>	540
5.9	Breast cancer <i>Multiple, often complex, risk factors</i>	382	6.7	Circulating DNA and other biomarkers for early diagnosis <i>Great potential, but challenges recognized</i>	550
5.10	Cervical cancer <i>Successes in some communities to be extended worldwide</i>	394	6.8	Governmental action to control carcinogen exposure <i>Multiple options covering diverse scenarios</i>	557
5.11	Endometrial cancer <i>Prevention through control of obesity</i>	403	6.9	Prevention strategies common to noncommunicable diseases <i>A focus on tobacco, alcohol, obesity, and physical inactivity</i>	565
5.12	Ovarian cancer <i>Complicated etiology and very few preventive options</i>	411	Contributors		573
5.13	Prostate cancer <i>Challenges for prevention, detection, and treatment</i>	421	Disclosures of interests		582
5.14	Testicular cancer <i>New inroads into early diagnosis</i>	430	Sources		584
5.15	Bladder cancer <i>A genotoxic causal agent recognized</i>	439	Subject index		595